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From a geological point of view much valuable information would result from a study of the double bridge of islands between Celebes and New Guinea—the more northerly running through Pulo Peling, the Banggai archipelago, the Sula Islands, Pulo Obi and Misol, to the so-called “duck-bill” of New Guinea; the more southerly through Buru and Ceram to Fakfak. This is, in fact, one of the most important and interesting tasks remaining to be done in the archipelago. A detailed examination of the geology of Ceram, known to us only through the work of Martin and Verbeek, would be of both scientific and practical value. In the domain of hydrography and oceanography there is much to be learned in the region round Ceram, and the program would include surveys, soundings, studies of the tides, currents, temperature and composition of the water, and the fauna and flora of the coast, the coastal waters, and the deep sea. Little is also known of the inhabitants of the interior of Ceram, their relationships among themselves and with the coast peoples, their languages, and so on. The zoology and botany of the island offer a wide field for research, and in conjunction with the geology should throw an important light on the past history of this part of the world. The flora of Central Ceram is considered to be probably the oldest member of the flora of the Moluccas. The proposed investigations promise results of great scientific interest.

THE United States Geological Survey has just printed a large, colored wall map showing the petroleum resources and the natural gas deposits of the United States, and also the thousands of miles of trunk oil pipe lines. The map shows the areas underlain by known oil pools and known gas pools, as well as general localities which are productive in either oil or gas, and also areas where there are noteworthy occurrences of either oil or gas but where there is no present production. The map is 49 by 76 inches, printed on the scale of 40 miles to 1 inch, in 5 colors. It is printed in two sheets and is sold by the Geological Survey. This map not only shows graphically the oil fields and pipe lines, but is an excellent general map of the United States.

UNIVERSITY AND EDUCATIONAL NEWS

A GIFT of \$10,000 has been made to Brown University from the Philadelphia alumni for the purpose of establishing the “Morgan Edwards Fellowship.”

THE council of the University of Paris has made all arrangements for beginning courses in the various departments at the usual date.

THE St. Louis College of Pharmacy will celebrate its semi-centennial on November 10 and 11, with appropriate exercises, participated in by prominent pharmaceutical educators from different sections of the country.

THE extension of the certificate privilege to accredited high schools and preparatory schools has resulted in an increase in the number of students in the freshman class entering Stevens Institute this fall of eighty-three per cent. over the number entering last year.

DR. WALTER PEARSON KELLEY has been appointed professor of agricultural chemistry in the graduate school of tropical agriculture and citrus experiment station of the University of California. Woodbridge Metcalf has been appointed assistant professor of forestry in the university, and Dr. Wilbur A. Sawyer, director of the California State Hygiene Laboratory, has been appointed lecturer in hygiene and preventive medicine in the medical school.

DR. CORNELIUS COPLEY has been appointed professor of laryngology in the College of Physicians and Surgeons, Columbia University, to succeed the late Dr. William K. Simpson.

MR. M. A. CHARAVAY, instructor in experimental engineering, in the Stevens Institute of Technology, has been appointed assistant professor. Mr. C. Lester Coggins, of the department of physics has accepted an assistant professorship at Rhode Island State College. Mr. L. C. F. Horle, a graduate of Stevens, has been appointed assistant in physics in his place.

DR. HOWARD THOMAS KARSNER, B.S., M.D. (Pennsylvania), now assistant professor of pathology in Harvard Medical School, has been appointed professor of pathology in the school of medicine, Western Reserve Univer-

sity, and will begin his duties December 1, 1914. The following additional full-time instructors began service this year: Henry O. Feiss, A.B., M.D. (Harvard), D.Sc. (Edinburgh), in experimental medicine; Gaius E. Harmon, M.D. (Boston), C.P.H. (Mass. Inst.), in hygiene; Bradley M. Patten, A.B., Ph.D. (Harvard), in histology and embryology; George E. Simpson, B.S. (Illinois) in organic and biochemistry.

THE following appointments have been made in the department of psychology at the University of Illinois: Dr. Homer B. Reed, instructor; Dr. Joseph E. De Camp, assistant; Miss Anna Sophie Rogers, graduate assistant, and Miss Helen Clark, fellow.

DR. RUDOLF ROTHE, professor of mathematics in the Technical School at Hanover, has been called to the Technical School at Charlottenburg to succeed the late Professor Hettner.

DR. PETER DEBYE, professor of physics at Utrecht, has accepted a call to Göttingen.

DISCUSSION AND CORRESPONDENCE

THE HISTORY OF SCIENCE

TO THE EDITOR OF SCIENCE: During the past months I have written a number of professors, deans and college presidents, as well as directors of institutes of technology, in reference to the value to American undergraduates of the study of the history of the sciences and industries. In each case the response received has been marked by cordiality and enthusiasm; so that I am now encouraged to seek a larger audience than can be reached by private correspondence. May I hope that the columns of your periodical will be open for a discussion of the matter?

Many of my correspondents (whose names, unfortunately, I have not yet sought permission to quote) feel that if in their undergraduate days they had been given a survey of the development of the sciences, or, better still, had been led to trace the evolution of scientific thought, their individual mental progress would thereby have been much stimulated and advanced. They feel, moreover, that such a

course of study as I suggest would be of special value in America, where our life and institutions commit us to the ideals of a democratic culture.

It is of course widely recognized that the individual sciences would be better taught if presented on an historical background; we know most vividly what we know in its origins. An old-fashioned course in chemistry taught us that oxygen was a colorless, tasteless, odorless gas, non-combustible, but a supporter of combustion, and left it to later chance reading to disclose the thrilling story of the discovery of oxygen. Those fortunate enough (perhaps years after graduation) to read eventually of the men of genius, Scheele, Priestley, Lavoisier, who had agonized to attain the generalization that had seemed so tame and valueless to the undergraduate, realized the defectiveness of instruction that sought to give the results of scientific investigation without availing itself of the historical motive.

The practise of teaching the sciences in their evolution is a needed modification of Herbert Spencer's pedagogy, without which his theory is both inconsistent and rude. On the one hand, he, like a true follower of Auguste Comte, held that the development of the individual intellect should rehearse the course of the history of civilization; on the other hand, he attacked as too primitive what he called the esthetic and ornamental studies. If he had supplemented his devotion to the sciences (as he understood them) by a recognition of the sciences in their development he would have been more consistent, and perhaps have been less bellicose in his attitude toward those languages in which Archimedes, Lucretius and Galileo wrote. That the history of the sciences was the essential history of civilization and as such should be rehearsed by each developing mind he still could have maintained.

Another defect in the undergraduate curriculum that might be made good by the general history of science is the lack of connection between scientific studies. In the old-fashioned college the student was permitted to take up biology in the freshman year, phys-